

ABSTRACT

A resist pattern for fabricating a microelectronic device is irradiated with an energy beam, raising the glass transition temperature of the upper parts of the resist pattern, then baked, causing a transition to a glassy state in lower parts of the resist pattern, which flow viscously so that the resist pattern assumes a tapered cross sectional shape. When this tapered resist pattern is used as an etching mask, tapered features can be formed in the device. In particular, tapered contact holes can be formed, providing an increased alignment tolerance and enabling the size of the device to be reduced.